

CLAIM AMENDMENTS

1. (Currently Amended) A method of operating outputting a digital document from an information apparatus that is to one or more output devices on a local area network for outputting an image of a network, the digital document that can be accessed accessible by the information apparatus, the digital document including at least part of a text or graphics information apparatus and the one or more output devices being distinct from the information apparatus, said method comprising:

discovering, at the information apparatus, the one or more output devices on the local area network,

Selecting an output device from among the one or more discovered output devices,

rasterizing the digital document on at the information apparatus to generate image data, the generation of the image data utilizing rendering parameters that are independent of the selected output device,

creating creating, at the information apparatus, an intermediate output data from that includes the image data,

transmitting transmitting, from the information apparatus, the intermediate output data to an output device that is on said local area network and includes the selected output device, the output device including an output engine that outputs images with a device-specific output size and resolution,

recovering recovering, at the output device, the image data from the intermediate output data,

converting converting, at the output device, the image data to instructions compatible with the output engine, based at least in part on the device-specific output size and resolution of the output engine,

providing the instructions to the output engine, and

operating the output engine in response to said instructions and thereby outputting an image of the digital document.

2. (Original) A method according to claim 1, wherein the output engine is one of a marking engine, a display engine and a projection engine.

3. (Original) A method according to claim 1, wherein the intermediate output data includes a mixed raster content encoding.

4. (Original) A method according to claim 1, wherein the output device is printing device that includes a printer controller and an output controller, the method further comprising,

generating with the output controller a print data that is acceptable to the printer controller and including the recovered image data into the print data, and

passing the print data to the printer controller for converting the image data into instructions compatible with the output engine, based at least in part on the device-specific output size and resolution of the marking engine.

5. (Original) A method according to claim 4, in which the print data includes a page description language and the method comprises generating with the output controller a page description language (PDL) representation of the digital document to the printer controller and interpreting with the printer controller the PDL representation and converting the image data based at least in part on said device-specific output size and resolution.

6. (Original) A method according to claim 1, wherein the image included in the intermediate output data is encoded at least with predetermined standard output size and resolution and the rasterizing step includes calculating at least one scale factor relating to the output size and resolution of the digital document to said predetermined standard output size and resolution and employing said scale factor as a rasterization parameter in the rasterizing step.

7. (Original) A method according to claim 7, wherein the predetermined standard output size and resolution is included in the output device and the step of converting the image data to instructions compatible with the output engine further includes converting the image data from at least the standard output size and resolution to the output size and resolution of the output engine.

8. (Original) A method according to claim 1, wherein the step of creating the intermediate output data includes at least one of compression, encoding, encryption and color correction.

9. (Original) A method according to claim 1, wherein the step of creating the intermediate output data includes creating an intermediate output data that includes at least one of an image, instructions, and a color profile.

10. (Original) A method according to claim 1, wherein the step of recovering the raster image data from the intermediate output data includes at least one of decoding, decryption, and decompression.

11. (Original) A method according to claim 1, wherein the step of converting the image data to instructions includes at least one of color space conversion, scaling, interpolation, color matching and halftoning.

12. (Original) A method according to claim 1, including obtaining a rasterization vector to the information apparatus and using said rasterization vector in the rasterizing step.

13. (Original) A method according to claim 12, wherein the rasterization vector has at least one component related to the output device and includes one or more of an output size, resolution, color space, and bit depth.

14. (Original) A method according to claim 12, wherein at least one component of the rasterization vector is based on a predetermined standard value or default.

15. (Original) A method according to claim 12, wherein the rasterization vector is obtained from the output device.

16. (Original) A method according to claim 1, wherein the method includes selecting an output device description from a plurality of output device descriptions presented to a user of the information apparatus.

17. (Original) A method according to claim 12, comprising inputting user preferences as components of a rasterization vector and using said rasterization vector in the rasterizing step.

18. (Currently Amended) A method of outputting an image of a digital document that can be accessed by an information apparatus to an output system, the output system being a distinct device from the information apparatus, the information apparatus including information related to predetermined standard rasterization parameter values that include one or more of bit depth, color space, output size, and resolution, the standard rasterization parameters are output device independent and do not correspond to a specific output device, said method comprising:

generating image data by rasterizing the digital document on the information apparatus in accordance at least in part with at least one predetermined standard device independent rasterization parameter value,

creating on the information apparatus an intermediate output data that includes the image data,

transmitting the intermediate output data from the information apparatus to an output system that system, the output system distinct from the information apparatus and includes an output engine that outputs an image with at least one device specific value that includes bit depth, color space, output size, or resolution,

recovering recovering, at the output system, the image data from the intermediate output data,

converting converting, at the output system, the image data with the at least one predetermined standard device independent, rasterization parameter value to device dependent instructions compatible with the output engine that include the at least one device specific value,

providing the instructions to the output engine, and

operating the output engine in response to said instructions and thereby outputting an image of the digital document.

19. (Original) A method according to claim 18, wherein the output device is a printing device and the output engine is a marking engine.

20. (Original) A method according to claim 18, comprising selecting said output system from among a plurality of available output systems and uploading at least one value specifying said predetermined rasterization parameters to the information apparatus,

21. (Currently Amended) A method of outputting an image of a digital document that can be accessed by an information apparatus, the digital document including at least part of an image, a text or graphics information, the information apparatus in a local area network, said method comprising:

discovering, at the information apparatus one or more output devices in the local wireless area network, the one or more output devices being a distinct device from the information apparatus,

selecting an output device model from a menu of models presented by the information apparatus, each model of output device including an output engine, and each output engine being characterized by a value of a rasterization vector,

accessing a value of the rasterization vector related to the output engine of the selected model,

selecting, at the information apparatus, an output device from among the one or more output devices discovered,

accessing a rasterization vector model that has at least one value corresponding to the selected output device,

rasterizing the digital document on the information apparatus in accordance with said rasterization vector to generate image data,

creating an intermediate output data on the information apparatus that includes the image data,

transmitting the intermediate output data from the information apparatus to an output device of said selected model the selected output device,

recovering at the output device the image data from the intermediate output data,

converting the image data to instructions compatible with the output engine of the output device,

providing the instructions to the output engine of the output device, and

operating the operating engine in response to said instructions and thereby outputting an image of the digital document.

22. (Currently Amended) A method according to claim 21, wherein the rasterization vector is obtained ~~from~~ from the output device.

23. (Original) A method according to claim 21, wherein the output device is a printing device and the output engine is a marking engine.

24. (Currently Amended) A method of outputting an image of a digital document that can be accessed by an information apparatus, said method comprising:

rasterizing the digital document on the information apparatus to generate image data, the digital document includes at least one of an image, graphics or text,

creating an intermediate output data on the information apparatus, the intermediate output data ~~including the image data, the image data being composed of a background layer and at least one foreground layer being output device independent and not corresponding to a specific output device model,~~

transmitting the intermediate output data data, from an information apparatus, to an output device that includes an output engine, the output device being distinct from the information apparatus,

recovering recovering, at the output device, the image data from the intermediate output data,

converting the image data into device dependent output instructions compatible with the output engine,

providing the instructions to the output engine, and

operating the output engine in response to said instructions and thereby outputting an image of the digital document.

25. (Currently Amended) A method according to claim 24, wherein the image data comprises a background layer and ~~at least one pair of layers composed of layer,~~ a foreground layer and a mask layer.

26. (Currently Amended) An imaging system comprising:

a local area network having a wireless propagation medium and at least first and second nodes, said first node including an information apparatus and said second node including an output device, said output

~~device including an output engine for outputting images,
a first means on the information apparatus for discovering the
output device,~~

~~a first second means on the information apparatus for rasterizing
a digital document to generate image data,~~

~~a second third means on the information apparatus for creating an
intermediate output data that includes the image data,~~

~~a third fourth means on the information apparatus for impressing
the intermediate output data on the wireless propagation medium, and~~

~~an output controller at the second node for retrieving the image
data from the intermediate output data and converting the image data
into instructions compatible with the output engine an input
acceptable for rendering by the output device.~~

27. (Canceled)

28. (Currently Amended) An imaging system according to claim 26,
wherein the output device includes a means for uploading to the
information apparatus an output device profile that specifies device
specific rasterization parameter values that include one or more of
bit depth, output ~~size~~ size, color profile, and resolution to the
information apparatus.

29. (Currently Amended) A method of outputting an image of a
digital document that can be accessed by an information apparatus,
said method including:

(a) establishing bidirectional communication between the
information apparatus and at least two output devices, the information
apparatus being a distinct device from the output devices,

(b) receiving a message an output device profile from a first
available output device specifying a feature of the first available
output device, the output device profile not previously stored or
installed in the output device and the feature included in the output
device profile relating to one or more of a quality of service, a
price indicator, a status indicator, an availability indicator, and an
output data format indicator,

(c) determining at the information apparatus and from the message
from the available output device received whether the feature of the

available output device matches a requirement for outputting the digital document,

(d) if so, selecting said available output device and transmitting image data to the selected output device, and otherwise receiving a message from another available output device specifying a feature of the other available output device, and

(e) repeating steps (c) and (d).

30. (Original) A method according to claim 29, comprising, prior to step (b), transmitting from the information apparatus a message that calls for a receiving output device to transmit a message that specifies a feature of the respective output device.

31. (Canceled)

32. (New) A method according to claim 29, in which the determining step (c) includes one of a user input or an automatic selection by a client application installed or stored in the information apparatus.

33. (New) A method according to claim 29, in which the establishing bidirectional communication step (a) is a wireless communication.

34. (New) A method according to claim 1, wherein the information apparatus is a mobile wireless device.

35. (New) A method according to claim 1, wherein the local area network is a wireless network.

36. (New) A method according to claim 35, wherein the wireless network is one of a Bluetooth, an infrared, a IEEE 802.11 and a wireless standard based on 2.4 GHz frequency.

37. (New) A method according to claim 21, wherein the information apparatus is a mobile device.

38. (New) A method according to claim 21, wherein the local area network is one of a Bluetooth, Irda, 802.11.

39. (New) An imaging system according to claim 26, wherein the information apparatus is a mobile device.